



# FCC PART 15.249 TEST REPORT

For

# **Keeson Technology Corporation Limited**

No. 158, Qiumao Road, Wangjiangjing Xiuzhou district Jiaxing, Zhejiang China

**FCC ID: 2AK23MC122** 

Report Type: **Product Type:** Original Report CONTROL BOX Alisa. Gao **Test Engineer:** Alisa Gao Report Number: RSHA181019001-00B **Report Date:** 2018-11-21 Oscar Ye Oscar. Ye RF Leader **Reviewed By: Test Laboratory:** Bay Area Compliance Laboratories Corp. (Kunshan) No.248 Chenghu Road, Kunshan, Jiangsu province, China Tel: +86-0512-86175000 Fax: +86-0512-88934268 www.baclcorp.com.cn

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## **GENERAL INFORMATION**

## **Product Description for Equipment under Test (EUT)**

Applicant	Keeson Technology Corporation Limited
Tested Model	MC122
Series Model	MC122BS; MC122TS; MC122SP; MC122KL; MC122LT; MC122BK
Model Difference	Model name
Product Type	CONTROL BOX
Dimension	$180\text{mm}(L) \times 90 \text{ mm}(W) \times 22 \text{ mm}(H)$
Power Supply	DC 29V from adapter

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All measurement and test data in this report was gathered from production sample serial number: 20181019001. (Assigned by BACL, Kunshan). The EUT was received on 2018-10-19.

#### **Objective**

This type approval report is prepared on behalf of Keeson Technology Corporation Limited in accordance with Part 2-Subpart J, and Part 15-Subparts A and C of the Federal Communication Commissions rules.

The tests were performed in order to determine compliance with FCC Part 15, Subpart C, and section 15.203, 15.205, 15.207, 15.209 and 15.249 rules.

#### **Related Submittal(s)/Grant(s)**

FCC Part 15.249 DXX grant with FCC ID: WKZRF358A.

#### **Test Methodology**

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

All radiated and conducted emissions measurement was performed at Bay Area Compliance Lab Corp. (Kunshan). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

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## **Measurement Uncertainty**

	Item	Uncertainty
AC Power Lin	es Conducted Emissions	3.19 dB
RF conduct	ed test with spectrum	0.9dB
RF Output Po	ower with Power meter	0.5dB
	30MHz~1GHz	6.11dB
Dadistad amissian	1GHz~6GHz	4.45dB
Radiated emission	6GHz~18GHz	5.23dB
	18GHz~40GHz	5.65dB
Оссир	pied Bandwidth	0.5kHz
Т	emperature	1.0℃
	Humidity	6%

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## **Test Facility**

The test site used by Bay Area Compliance Laboratories Corp. (Kunshan) to collect test data is located on the No.248 Chenghu Road, Kunshan, Jiangsu province, China.

Bay Area Compliance Laboratories Corp. (Kunshan) Lab is accredited to ISO/IEC 17025 by A2LA (Lab code: 4323.01) and the FCC designation No. CN1185 under the FCC KDB 558074 D01. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2014.

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## SYSTEM TEST CONFIGURATION

## Justification

Channel list:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2403	40	2442
2	2404		
	•••		•••
38	38 2440		2479
39	2441	78	2480

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EUT was tested with Channel 1, 40 and 78.

## **EUT Exercise Software**

RF test tool: UartAssist.exe

## **Support Equipment List and Details**

Manufacturer	Description	Model	Serial Number
OKIN	Head Actuator	JLDQ-10	68000011150188170951
OKIN	Foot Actuator	JLDQ.10.326.150D	68000942150187093972
OKIN	Motor*2	ZYT-36S-42-5	68000044121805110942
OKIN	Lamp*3	JLDP.15.501.401	6800110415P186120009
DELL	Notebook	GX620	D65874152
DELL	Adapter-2	LA65NS0-00	DF263
OKIN	Debug Board	/	/

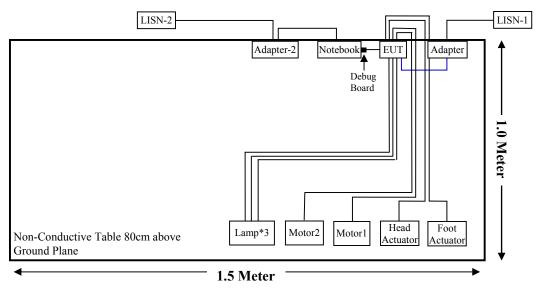
## **External I/O Cable**

Cable Description	Length (m)	From Port	То
Power cable*2	1.0	EUT	Motor
Power cable	0.5	EUT	Head Actuator
Power cable	0.5	EUT	Foot Actuator
Power cable*3	4.0	EUT	Lamp
DC Cable	1.8	EUT	Adapter
AC Power Cord	1.8	Adapter	LISN-1/AC Source/Socket

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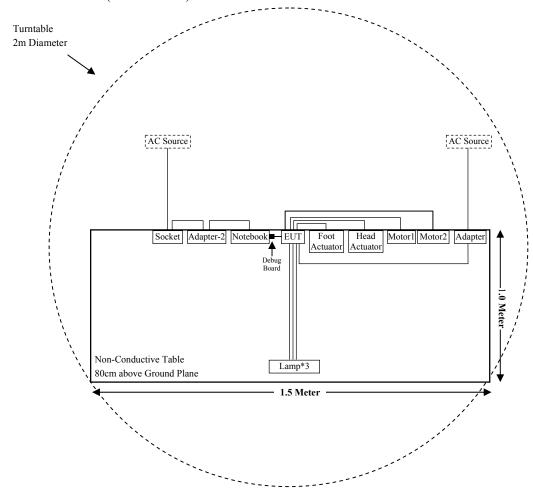
## **Block Diagram of Test Setup**

For Conducted Emissions:



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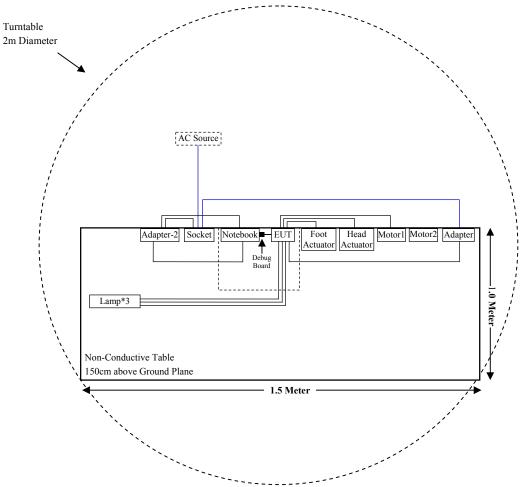
For Radiated Emissions(Below 1GHz):



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## For Radiated Emissions(Above 1GHz):



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## SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§15.203	Antenna Requirement	Compliant
§15.207(a)	Conduction Emissions	Compliant
15.205, §15.209, §15.249	Radiated Emissions& Out of Band Emission	Compliant
§15.215 (c)	20 dB Bandwidth	Compliant

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## TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date			
Radiated Emission Test (Chamber 1#)								
Rohde & Schwarz	Rohde & Schwarz EMI Test Receiver		100195	2018-11-12	2019-11-11			
Sunol Sciences	Sunol Sciences Broadband Antenna		A090413-1	2016-12-26	2019-12-25			
Sonoma Instrunent	Pre-amplifier	310N	171205	2018-08-15	2019-08-14			
Rohde & Schwarz	Auto test Software	EMC32	100361	/	/			
MICRO-COAX	Coaxial Cable	Cable-8	008	2018-08-15	2019-08-14			
MICRO-COAX	Coaxial Cable	Cable-9	009	2018-08-15	2019-08-14			
MICRO-COAX	Coaxial Cable	Cable-10	010	2018-08-15	2019-08-14			
	Radiated Em	nission Test (Chan	nber 2#)	l .	l			
Rohde & Schwarz	EMI Test Receiver	ESU40	100207	2018-08-27	2019-08-26			
ETS-LINDGREN	Horn Antenna	3115	6229	2016-01-11	2019-01-10			
ETS-LINDGREN	Horn Antenna	3116	00084159	2016-10-18	2019-10-17			
MICRO-TRONICS	Notch Filter	BRM50702	G024	2018-08-05	2019-08-04			
A.H.Systems, inc	Amplifier	2641-1	466	2018-09-11	2019-09-10			
EM Electronics Corporation	Amplifier	EM18G40G	060726	2018-03-22	2019-03-21			
Narda	Attenuator/10dB	10dB	010	2018-08-15	2019-08-14			
Rohde & Schwarz	Auto test Software	EMC32	100361	/	/			
MICRO-COAX	Coaxial Cable	Cable-6	006	2018-08-15	2019-08-14			
MICRO-COAX	Coaxial Cable	Cable-11	011	2018-08-15	2019-08-14			
MICRO-COAX	Coaxial Cable	Cable-12	012	2018-08-15	2019-08-14			
MICRO-COAX	Coaxial Cable	Cable-13	013	2018-08-15	2019-08-14			
	R	F Conducted Test						
Rohde & Schwarz	Signal Analyzer	FSIQ26	836131/009	2018-11-12	2019-11-11			
Narda	Attenuator/10dB	10dB	010	2018-08-15	2019-08-14			
Keeson	RF Cable	KeesonC01	C01	Each Time	/			
	Conc	lucted Emission Te	est					
Rohde & Schwarz	EMI Test Receiver	ESCS30	834115/007	2018-11-12	2019-11-11			
Rohde & Schwarz	LISN	ENV216	3560655016	2018-11-15	2019-11-14			
Rohde & Schwarz	LISN	ESH3-Z5	862770/011	2018-11-12	2019-11-11			
BACL	Auto test Software	BACL-EMC	CE001	/	/			
Narda	Attenuator/6dB	10690812-2	26850-6	2018-01-10	2019-01-09			
MICRO-COAX	Coaxial Cable	Cable-15	015	2018-08-15	2019-08-14			

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<sup>\*</sup> Statement of Traceability: Bay Area Compliance Laboratories Corp. (Kunshan) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

## FCC§15.203 - ANTENNA REQUIREMENT

## **Applicable Standard**

For intentional device, according to §15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used.

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## **Antenna Connector Construction**

The EUT has a PCB antenna and antenna gain is 0dBi, which was permanently attached, fulfill the requirement of this section, please refer to the EUT photos.

Result: Compliant.

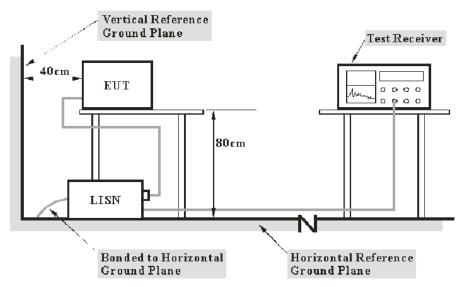
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## FCC §15.207 (a) – AC LINE CONDUCTED EMISSIONS

#### **Applicable Standard**

FCC§15.207

#### **EUT Setup**



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Note: 1. Support units were connected to second LISN.

2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.207 limits.

## **EMI Test Receiver Setup**

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

#### **Test Procedure**

During the conducted emission test, the adapter was connected to the outlet of the LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and average detection mode.

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#### **Corrected Factor & Margin Calculation**

The Corrected Factor is calculated by adding LISN VDF (Voltage Division Factor), Cable Loss and Transient Limiter Attenuation. The basic equation is as follows:

Corrected Factor (dB) = LISN VDF (dB) + Cable Loss (dB) + Transient Limiter Attenuation (dB)

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The "Margin" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7 dB means the emission is 7 dB below the limit. The equation for margin calculation is as follows:

Margin (dB) = Limit (dB $\mu$ V) – Corrected Amplitude (dB $\mu$ V)

## **Test Results Summary**

According to the recorded data in following table, the EUT complied with the FCC Part 15.207.

#### **Test Data**

#### **Environmental Conditions**

Temperature:	25.0℃
Relative Humidity:	48 %
ATM Pressure:	101.2 kPa

The testing was performed by Alisa Gao on 2018-11-15.

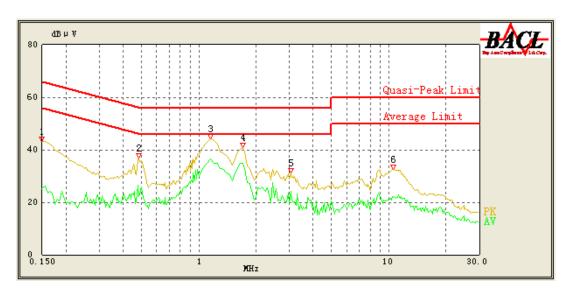
Test Result: Compliant.

EUT operation mode: Transmitting in low channel. (Worst case)

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## **AC 120V/60Hz, Line**

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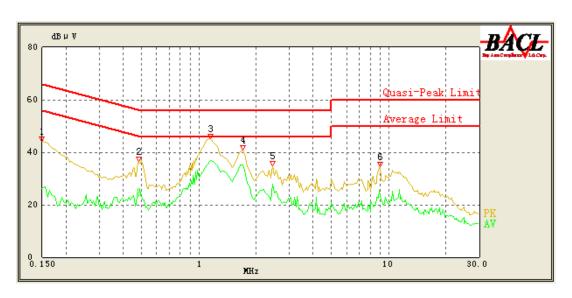


Frequency (MHz)	Reading (dBµV)	Detector (PK/AV/QP)	Bandwidth (kHz)	Line	Corrected Factor (dB)	Limit (dBµV)	Margin (dB)	Comment
0.150	43.28	QP	9.000	L1	16.06	66.00	22.72	Compliant
0.150	25.33	AV	9.000	L1	16.06	56.00	30.67	Compliant
0.485	36.75	QP	9.000	L1	16.08	56.43	19.68	Compliant
0.485	22.29	AV	9.000	L1	16.08	46.43	24.14	Compliant
1.150	44.31	QP	9.000	L1	15.88	56.00	11.69	Compliant
1.150	36.48	AV	9.000	L1	15.88	46.00	9.52	Compliant
1.700	40.75	QP	9.000	L1	15.86	56.00	15.25	Compliant
1.700	34.78	AV	9.000	L1	15.86	46.00	11.22	Compliant
3.050	31.11	QP	9.000	L1	15.85	56.00	24.89	Compliant
3.050	24.06	AV	9.000	L1	15.85	46.00	21.94	Compliant
10.550	32.52	QP	9.000	L1	16.08	60.00	27.48	Compliant
10.550	21.70	AV	9.000	L1	16.08	50.00	28.30	Compliant

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## AC 120V/60Hz, Neutral

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Frequency (MHz)	Reading (dBµV)	Detector (PK/AV/QP)	Bandwidth (kHz)	Line	Corrected Factor (dB)	Limit (dBµV)	Margin (dB)	Comment
0.150	44.07	QP	9.000	N	16.06	66.00	21.93	Compliant
0.150	26.03	AV	9.000	N	16.06	56.00	29.97	Compliant
0.485	36.65	QP	9.000	N	16.11	56.43	19.78	Compliant
0.485	23.08	AV	9.000	N	16.11	46.43	23.35	Compliant
1.150	45.05	QP	9.000	N	15.94	56.00	10.95	Compliant
1.150	36.67	AV	9.000	N	15.94	46.00	9.33	Compliant
1.700	40.91	QP	9.000	N	15.92	56.00	15.09	Compliant
1.700	35.31	AV	9.000	N	15.92	46.00	10.69	Compliant
2.450	34.67	QP	9.000	N	15.90	56.00	21.33	Compliant
2.450	27.82	AV	9.000	N	15.90	46.00	18.18	Compliant
9.000	34.34	QP	9.000	N	15.97	60.00	25.66	Compliant
9.000	23.32	AV	9.000	N	15.97	50.00	26.68	Compliant

#### Note:

1) Corrected Factor (dB) = LISN VDF (dB) + Cable Loss (dB) + Transient Limiter Attenuation (dB)

2) Margin (dB) = Limit (dB $\mu$ V) – Corrected Amplitude (dB $\mu$ V)

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# FCC§15.205, §15.209&§15.249- RADIATED EMISSIONS& OUT OF BAND EMISSION

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## **Applicable Standard**

As per FCC§15.249 (a), except as provided in paragraph (b) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

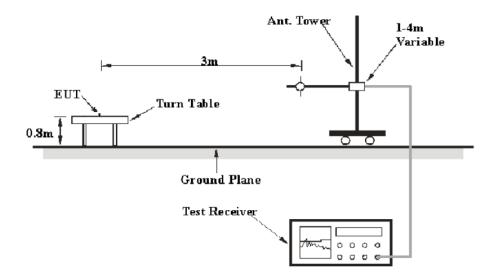
Fundamental frequency	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)
902–928 MHz	50	500
2400–2483.5 MHz	50	500
5725–5875 MHz	50	500
24.0–24.25 GHz	250	2500

As per FCC§15.249 (c), Field strength limits are specified at a distance of 3 meters.

(d) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.

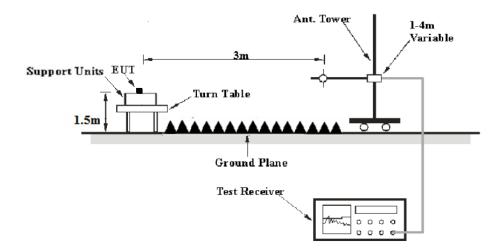
## **EUT Setup**

Below 1 GHz:



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#### Above 1 GHz:



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The radiated emission and out of band emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209/15.205 and FCC 15.249 limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

#### **Test Equipment Setup**

The system was investigated from 30 MHz to 25 GHz.

During the radiated emission test, the EMI test receiver Setup was set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Detector
30 MHz – 1000 MHz	120 kHz	300 kHz	120 kHz	QP
Above 1GHz	1MHz	3 MHz	/	PK
Above IGHZ	1MHz	3 MHz	/	Ave

#### **Test Procedure**

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

Data was recorded in Quasi-peak detection mode for frequency range of 30 MHz-1 GHz, peak and Average detection modes for frequencies above 1 GHz.

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## **Corrected Amplitude & Margin Calculation**

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

Corrected Amplitude ( $dB\mu V/m$ ) = Meter Reading ( $dB\mu V$ ) + Antenna Factor (dB/m) + Cable Loss (dB) - Amplifier Gain (dB)

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The "Margin" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin (dB) = Limit (dB $\mu$ V/m) – Corrected Amplitude (dB $\mu$ V/m)

## **Test Results Summary**

According to the data in the following table, the EUT complied with the FCC Part 15.209 &15.205 & 15.249.

#### **Test Data**

#### **Environmental Conditions**

Temperature:	24.2°C
Relative Humidity:	50%
ATM Pressure:	101.3kPa

The testing was performed by Alisa Gao on 2018-11-19.

Test Mode: Transmitting

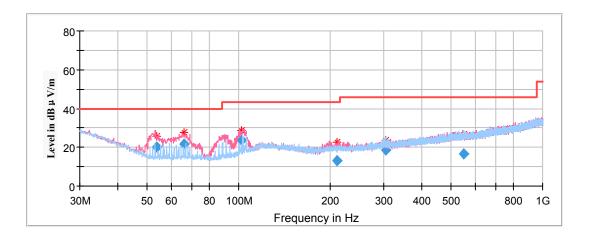
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## **Spurious Emission Test:**

#### 30MHz-1GHz

(Pre-scan with low, middle and high channels of operation in the X,Y and Z axes of orientation, the worst case **low** channel of operation in X-axis of orientation was recorded)

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Frequency	Corrected Amplitude	Rx Antenna		Turntable	Corrected	Limit	Margin
(MHz)	Quasi-peak (dBμV/m)	Height (cm)	Polar (H/V)	Degree	Factor (dB/m)	(dBµV/m)	(dB)
53.901600	20.36	101.0	V	206.0	-17.7	40.00	19.64
66.095500	21.73	101.0	V	258.0	-17.5	40.00	18.27
102.300750	23.77	101.0	V	39.0	-14.5	43.50	19.73
211.381850	13.03	101.0	V	18.0	-12.3	43.50	30.47
303.783500	18.72	101.0	Н	24.0	-10.4	46.00	27.28
551.054000	16.71	199.0	Н	100.0	-5.6	46.00	29.29

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#### 1GHz-18GHz

100

80

40 20

0-

1G

Level in dB µ V/m 60

(Pre-scan in the X,Y and Z axes of orientation, the worst case **X-axis of orientation** was recorded.)

- 1. This test was performed with the 2.4-2.5GHz notch filter.
- 2. Corrected Factor (dB/m) = Antenna factor (RX) (dB/m) + Cable Loss (dB) Amplifier Factor (dB) Corrected Amplitude (dBμV/m) = Corrected Factor (dB/m) + Reading (dBμV) Margin (dB) = Limit (dBμV/m) Corrected Amplitude (dBμV/m)

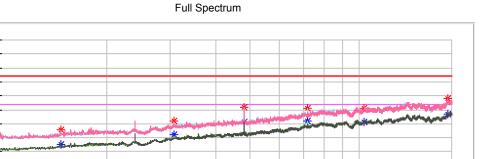
3G

4G

Frequency in Hz

2G

#### Low Channel: 2403MHz



5G

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10G

8

18G

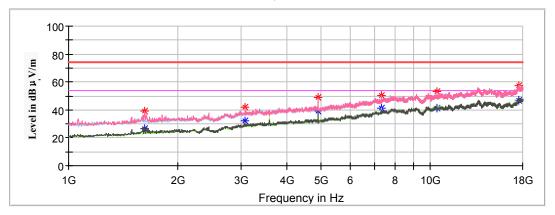
Frequency	Corrected .	Amplitude	Rx A	ntenna	Turntable	Corrected	Limit	Margin
(MHz)	MaxPeak (dBμV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)	Degree	Factor (dB/m)	(dBµV/m)	(dB)
1493.000000		25.51	100.0	V	186.0	-7.6	54.00	28.49
1493.000000	35.47		100.0	V	186.0	-7.6	74.00	38.53
3070.600000		32.47	150.0	V	201.0	-1.5	54.00	21.53
3070.600000	42.03		150.0	V	201.0	-1.5	74.00	31.97
4806.000000		41.35	200.0	V	232.0	1.8	54.00	12.65
4806.000000	51.57		200.0	V	232.0	1.8	74.00	22.43
7209.000000		41.92	200.0	V	243.0	8.9	54.00	12.08
7209.000000	50.83		200.0	V	243.0	8.9	74.00	23.17
10278.600000		41.12	200.0	V	207.0	12.7	54.00	12.88
10278.600000	51.13		200.0	V	207.0	12.7	74.00	22.87
17507.000000		46.67	100.0	V	154.0	17.2	54.00	7.33
17507.000000	58.18		100.0	V	154.0	17.2	74.00	15.82

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## Middle Channel: 2442MHz





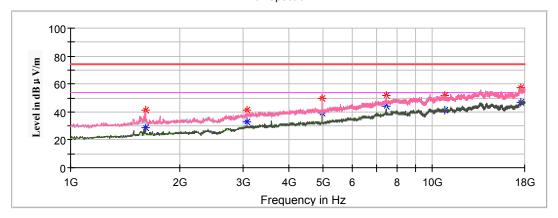
Frequency	Corrected A	Amplitude	Rx A	ntenna	Turntable	Corrected	Limit	Margin
(MHz)	MaxPeak (dBμV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)	Degree	Factor (dB/m)	(dBµV/m)	(dB)
1625.600000		26.82	200.0	V	184.0	-7.1	54.00	27.18
1625.600000	39.24		200.0	V	184.0	-7.1	74.00	34.76
3070.600000		32.27	150.0	V	185.0	-1.5	54.00	21.73
3070.600000	41.93		150.0	V	185.0	-1.5	74.00	32.07
4884.000000		39.36	200.0	V	248.0	1.9	54.00	14.64
4884.000000	48.82		200.0	V	248.0	1.9	74.00	25.18
7326.000000		41.01	200.0	V	241.0	9.2	54.00	12.99
7326.000000	50.60		200.0	V	241.0	9.2	74.00	23.40
10428.200000		41.30	200.0	V	56.0	12.7	54.00	12.70
10428.200000	52.83		200.0	V	56.0	12.7	74.00	21.17
17541.000000		46.99	200.0	V	163.0	17.2	54.00	7.01
17541.000000	57.39		200.0	V	163.0	17.2	74.00	16.61

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## High Channel: 2480MHz





Frequency	Corrected A	Amplitude	Rx A	ntenna	Turntable	Corrected	Limit	Margin
(MHz)	MaxPeak (dBμV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)	Degree	Factor (dB/m)	(dBµV/m)	(dB)
1608.600000		28.36	150.0	V	192.0	-7.2	54.00	25.64
1608.600000	41.21		150.0	V	192.0	-7.2	74.00	32.79
3070.600000		32.72	100.0	V	196.0	-1.5	54.00	21.28
3070.600000	41.40		100.0	V	196.0	-1.5	74.00	32.60
4960.000000		38.85	200.0	V	250.0	2.0	54.00	15.15
4960.000000	49.48		200.0	V	250.0	2.0	74.00	24.52
7440.000000		43.97	200.0	V	250.0	9.6	54.00	10.03
7440.000000	51.83		200.0	V	250.0	9.6	74.00	22.17
10812.400000		41.27	200.0	V	324.0	13.2	54.00	12.73
10812.400000	51.82		200.0	V	324.0	13.2	74.00	22.18
17551.200000		46.80	150.0	V	335.0	17.2	54.00	7.20
17551.200000	57.30		150.0	V	335.0	17.2	74.00	16.70

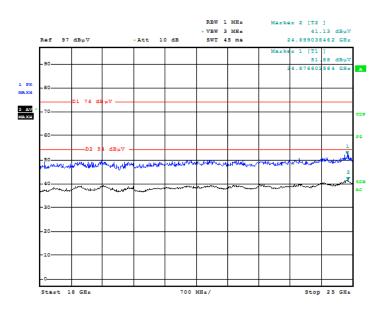
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#### 18GHz-25GHz

(Pre-scan with low, middle and high channels of operation in the X,Y and Z axes of orientation, the worst case **low** channel of operation in X-axis of orientation was recorded)

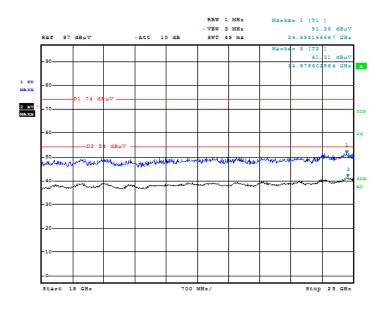
#### Horizontal

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Date: 19.NOV.2018 10:57:48

#### Vertical



Date: 19.NOV.2018 11:15:44

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#### **Fundamental Test & Restricted Bands Emissions Test:**

(Pre-scan in the X, Y and Z axes of orientation, the worst case **X-axis of orientation** was recorded.)

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#### Note:

1. Corrected Factor (dB/m) = Antenna factor (RX) (dB/m) + Cable Loss (dB) – Amplifier Factor (dB) Corrected Amplitude (dB $\mu$ V /m) = Corrected Factor (dB/m) + Reading (dB $\mu$ V) Margin (dB) = Limit (dB $\mu$ V/m) – Corrected Amplitude (dB $\mu$ V /m)

Frequency	Corrected .	Amplitude	Rx Antenna		Turntable	Corrected	Limit	Margin
(MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)	Degree	Factor (dB/m)	(dBµV/m)	(dB)
			Low Chai	nnel: 2403N	1Hz			_
2403.00	94.74		100.0	V	91.0	6.0	114	19.26
2403.00		93.30	100.0	V	91.0	6.0	94	0.7
2403.00	92.58		200.0	Н	197.0	6.0	114	21.42
2403.00		90.86	200.0	Н	197.0	6.0	94	3.14
2384.93	54.0		100.0	V	240.0	6.0	74	20.0
2384.93		52.26	100.0	V	63.0	6.0	54	1.76
		N	Aiddle Ch	annel: 2442	MHz			
2442.00	93.47		200.0	V	161.0	6.2	114	20.53
2442.00		91.97	200.0	V	161.0	6.2	94	2.03
2442.00	91.11		250.0	Н	128.0	6.2	114	22.89
2442.00		90.60	250.0	Н	128.0	6.2	94	3.40
	•		High Cha	nnel: 2480N	ИНz			
2480.00	93.88		150.0	V	143.0	6.3	114	20.12
2480.00		92.64	150.0	V	143.0	6.3	94	1.36
2480.00	90.75		150.0	Н	28.0	6.3	114	23.25
2480.00		89.33	150.0	Н	28.0	6.3	94	4.67
2487.23	54.56		200.0	V	235.0	6.3	74	19.44
2487.23		53.02	200.0	V	235.0	6.3	54	0.98

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## FCC §15.215(c) – 20 dB BANDWIDTH TESTING

## **Applicable Standard**

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

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#### **Test Procedure**

- 1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
- 2. Position the EUT on the test table without connection to measurement instrument. Turn on the EUT. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
- 3. Measure the frequency difference of two frequencies that were attenuated 20 dB from the reference level. Record the frequency difference as the emission bandwidth.
- 4. Repeat above procedures until all frequencies measured were complete.

#### **Test Data**

#### **Environmental Conditions**

Temperature:	24.4°C
<b>Relative Humidity:</b>	50%
ATM Pressure:	101.3kPa

The testing was performed by Alisa Gao on 2018-11-13.

Test Result: Compliant.

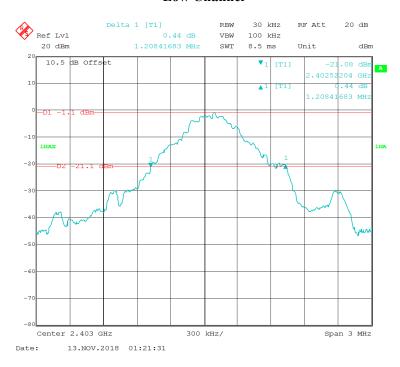
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Test Mode: Transmitting

Channel	Frequency (MHz)	20 dB Bandwidth (MHz)
Low	2403	1.208
Middle	2442	1.148
High	2480	1.076

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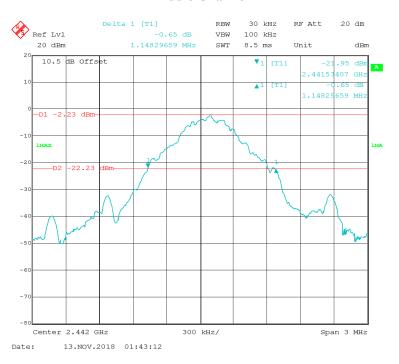
#### **Low Channel**



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#### **Middle Channel**

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#### **High Channel**



\*\*\*\*\* END OF REPORT \*\*\*\*\*

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